



## PATENT ABSTRACTS OF JAPAN

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NARUTAKI YOZO  
FUJIOKA SHIYUGO**(54) **LIQUID CRYSTAL DISPLAY DEVICE**be perpendicular to that of the  $\lambda/2$ -wave plate 11.

(57) Abstract:

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**PROBLEM TO BE SOLVED:** To improve coloring in a reflection mode of dark display by eliminating the variation of polarization in the light wavelength band, and approximately circular-polarizing the light in the reflection mode.

**SOLUTION:** A  $\lambda/4$ -wave plate 7 is arranged on the opposite plane of the side where a counter electrode 4 of a substrate 2 is formed, and further, a  $\lambda/4$ -wave plate 10 is arranged on the opposite plane of the side where a reflecting electrode 3 and a transparent electrode 8 of a substrate 1 are formed, and the lagging axis, of the  $\lambda/4$ -wave plate 10 is set so as to be perpendicular to that of the  $\lambda/4$ -wave plate 7. A  $\lambda/2$ -wave plate 11 is arranged on the other side of the substrate 2 of the  $\lambda/4$  board 7 and a  $\lambda/2$ -wave plate 12 is arranged on the other side of the substrate 1 of the  $\lambda/4$ -wave plate 10, respectively, and the lagging axis of the  $\lambda/2$ -wave plate 11 is set to be 60 degrees tilted against that of  $\lambda/4$ -wave plate 7; the lagging axis of the  $\lambda/2$ -wave plate 12 is set to be 60 degrees tilted against that of  $\lambda/4$ -wave plate 10; and the lagging axis of the  $\lambda/2$ -wave plate 12 is set to

6. 偏光板
11. $\lambda/2$ 板
7. $\lambda/4$ 板
2. 基板
4. 対向電極
5. LC層 (垂直配向)
3. 反射電極
8. 透明電極
1. 基板
10. $\lambda/4$ 板
12. $\lambda/2$ 板
9. 偏光板